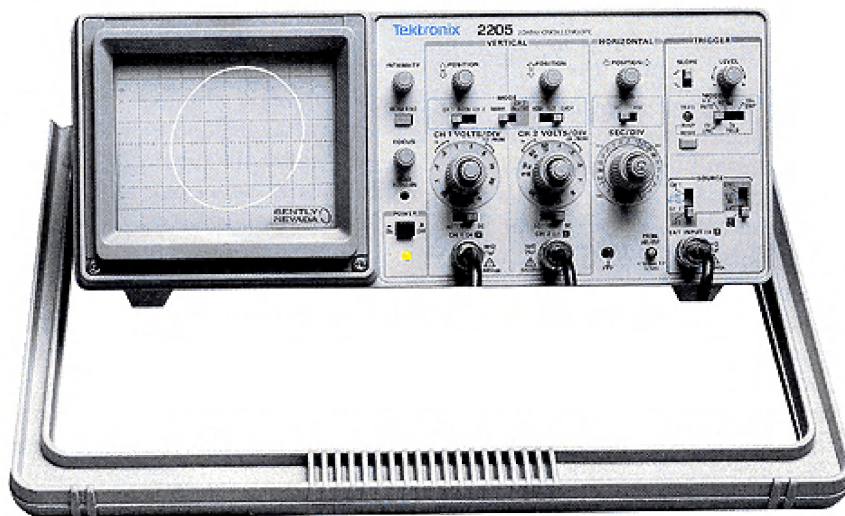


New Product

Full-function, low-cost oscilloscope now available



Bently Nevada is pleased to introduce a new, high-performance, low-cost oscilloscope for observing vibration signals on rotating equipment. The instrument was developed in conjunction with Tektronix, Inc. to provide quality and performance at a very affordable price.

Oscilloscopes have been available from Bently Nevada for many years. Our intent is to offer a high performance oscilloscope that provides essential machinery diagnostic capabilities at a low price. Specially designed and modified by Tektronix® for Bently Nevada, this new oscilloscope offers major advantages over conventional oscilloscopes for:

- Machinery diagnostics

- Documenting slow roll runout
- Verification of transducer and monitor electronic performance
- Technical training

Although your test equipment inventory may already include a conventional oscilloscope, the Bently Nevada oscilloscope is unique because it is specially adapted for machinery transducers and monitoring systems. The oscilloscope provides important features such as:

- X versus Y Orbit display
- Z-Axis intensity for Keyphasor® input
- DC offset adjust on both channels for to allow DC coupled Orbits.

With these features, the oscilloscope can be connected directly to the buffered transducer outputs on your monitoring system to show those signals on its "real-time" display. If a problem develops on your rotating machinery, changes in waveform or Orbit data can help you determine the cause of the problem. The oscilloscope **clearly shows vibration shape or form** which is an important parameter for machinery diagnostics.

The oscilloscope can also be used in parallel with other diagnostic and recording equipment to provide an on-line presentation of the machine's behavior during a startup or coastdown. When a machine event takes place, the oscilloscope is a "real-time" instrument that instantly responds to changing conditions.

Transducer and oscilloscope conventions

The following conventions are commonly used by vibration specialists to ensure that standardized operating procedures are followed for machinery diagnostics:

1. Proximity probes are mounted in an XY configuration at each journal bearing to measure shaft radial position and radial vibration. The XY reference is based on the **Cartesian coordinate system** where X represents the horizontal axis and Y represents the vertical axis. XY probes are mounted 90 degrees apart but not necessarily at the vertical and horizontal planes.

2. As viewed from the driver end of the machine train, the vertical (Y) transducer is always located 90 degrees counterclockwise from the horizontal (X) transducer. This convention is followed regardless of the direction of shaft rotation. (See Figure 1.)

3. Bently Nevada 3300 Dual Radial Vibration Monitors locate vertical (Y) transducers on Channel A and horizontal (X) transducers on Channel B.

4. On the new Bently Nevada oscillo-

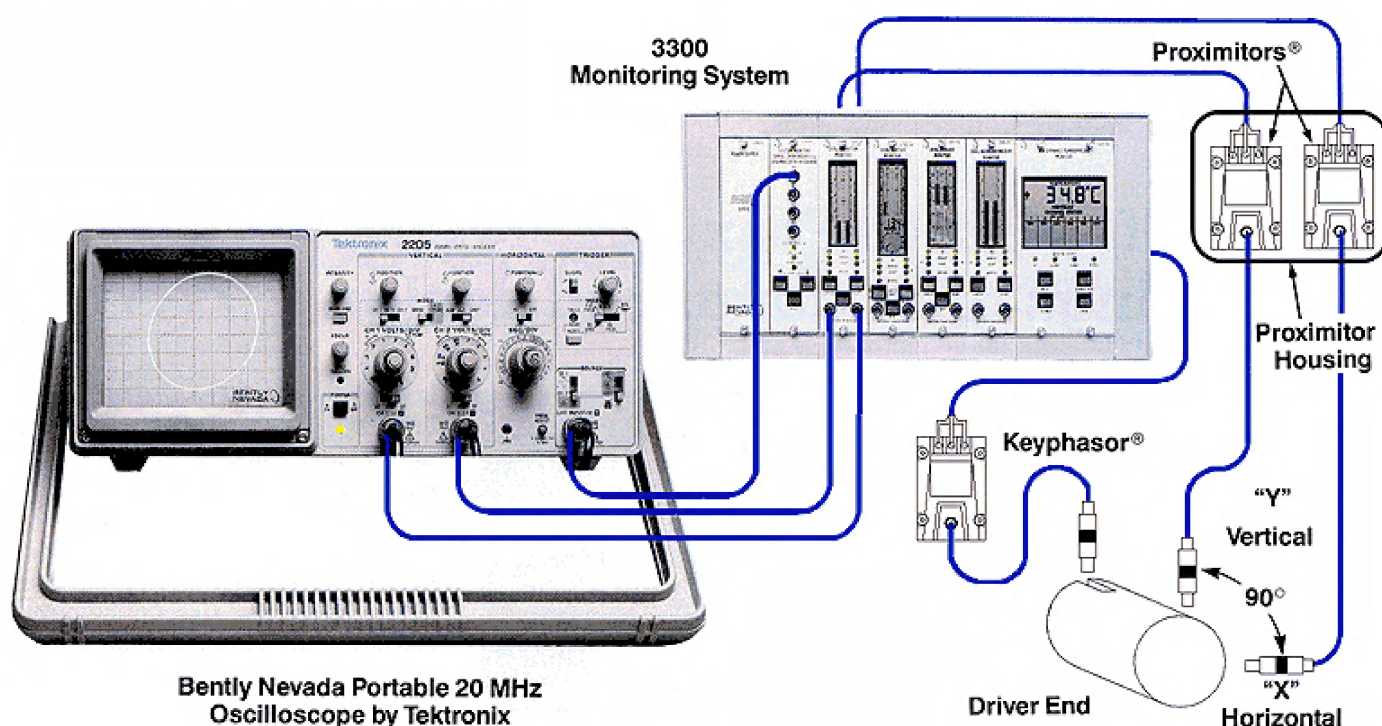


Figure 1

Vertical and horizontal transducers as viewed from the driver end of the machine. The oscilloscope easily connects to "Buffered Transducer" outputs on the front panel of the 3300 System.

scope, vertical (Y) transducers are connected to "Ch 2 or Y" and horizontal (X) transducers are connected to "Ch 1 or X." The Keyphasor® signal is brought into "Ext input or Z."

5. For XY Timebase displays (with AC coupling) the vertical (Y) signal is positioned in the upper half of the oscilloscope screen and the horizontal (X) signal in the lower half of the screen. When switched to the "XY" mode, the resultant Orbit is positioned in the center of the screen. When using DC coupling, waveforms and Orbits may not remain in the above position. DC coupling is useful to determine the average shaft position changes.

Oscilloscope accessories

To demonstrate dynamic rotor behavior in the laboratory or classroom, the Bently Nevada rotor kit is available to help students learn machine balancing and diagnostic techniques. The rotor kit and the oscilloscope are invaluable

tools for hands-on learning experiences.

An oscilloscope camera is available to photograph Timebase waveforms and Orbits for documentation purposes. A double-exposure photograph can be taken by the camera to document two separate displays in one picture. The camera can also document shaft runout.

Connections between buffered transducer outputs on the front of Bently Nevada monitors and the oscilloscope are made quickly using extension cables with male BNC connectors at both ends.

Other convenient accessories include the oscilloscope travel case, 19" rack mount kit and accessory pouch for cables, tools and adapters.

Easy to operate

As oscilloscope development continues, we have updated our product to meet your needs. Our latest unit is portable and rugged. It provides all the important functions of our previous oscilloscopes and it is easier to operate.

The front panel's simplicity allows you to quickly become familiar with its functions.

Our newest oscilloscope is **less than half the price** of our previous unit. It may be a good time to evaluate its suitability for your diagnostic equipment inventory or technical training program. This new oscilloscope is an important instrument for trouble-shooting, and now it's even a better value.

Oscilloscope training is provided at Bently Nevada's Data Acquisition Course, one of our Technical Training Seminars. It is also provided at our Machinery Monitoring Course which can be held at your facility. For more information and a schedule of our Technical Training seminars, request literature L2044 on the reader service card.

For oscilloscope ordering information, request data sheet L6026 on the reader service card or contact your nearest Bently Nevada representative. ■